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June 14, 2010

Mr. S. Derek Phelps
Executive Director
Connecticut Siting Council
Ten Franklin Square
New Britain, Connecticut 06051

Re: Connecticut Siting Council Docket No. 370A-MR
The Connecticut Light and Power Company application for a Certificate of
Environmental Compatibility and Public Need for the Manchester Substation
to Meekville Junction Circuit Separation Project in Manchester, Connecticut

Dear Mr. Phelps:

In connection with the above-referenced matter, on behalf of The Connecticut
Light and Power Company, enclosed please find an original plus twenty (20) copies of
the Proposed Supplemental Findings of Fact.

Very truly yours,

CARMODY & TORRANCE LLP

By: 
Marianne Barbino Dubuque

MBD/ctf
Enclosures

cc: Service List Dated November 13, 2009

{W1829499}

WATERBURY

NEW HAVEN

SOUTHBURY

STATE OF CONNECTICUT

SITING COUNCIL

Docket 370A: The Connecticut Light and Power Company application for a Certificate of Environmental Compatibility and Public Need for the Manchester Substation to Meekville Junction Circuit Separation Project in Manchester, Connecticut.	<p style="text-align:center">DOCKET 370A-MR</p> <p style="text-align:center">PROCEEDINGS ON RECONSIDERATION</p> <p style="text-align:right">June 14, 2010</p>
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PROPOSED SUPPLEMENTAL FINDINGS OF FACT

I. INTRODUCTION

1. These Findings of Fact supplement the Council's previous Findings of Fact in Docket 370, dated March 16, 2010, which are incorporated herein by reference. To the extent these Findings are inconsistent with any of the previous Findings of Fact, these Findings shall supersede the earlier Findings.

2. On March 16, 2010, the Connecticut Siting Council (Council) denied without prejudice an application from The Connecticut Light and Power Company (CL&P) for a Certificate of Environmental Compatibility and Public Need (Certificate) for the Manchester to Meekville Junction Circuit Separation Project (MMP), which would be located in the Town of Manchester within CL&P's existing transmission line right-of-way (ROW), extending generally between CL&P's Manchester Substation to a point immediately south of Meekville Junction. The Council's denial of the MMP was based on lack of sufficient information to evaluate the MMP compared to a variant of the project, referred to as MMP-V. Compared to the 2.2-mile MMP, which would be pre-

built to accommodate a 345-kilovolt (kV) line but operated at 115 kV, the MMP-V would entail the construction and operation of a 345-kV transmission line along approximately 2.7 miles of ROW, as well as modifications to the Manchester Substation. (Record)

3. On April 7, 2010, CL&P filed a petition to the Council requesting reconsideration of the denial of a Certificate for MMP (Petition), which included consideration of the MMP-V, together with Direct Testimony of CL&P witnesses. (CL&P 44)

4. Parties and intervenors in Docket 370, as noted in the Council's Findings of Fact dated March 16, 2010 (FOF), were served a copy of the Petition, as was the Honorable Louis A. Spadaccini, the Mayor of the Town of Manchester. (CL&P 44, Cover Letter)

5. The Council assigned the Petition Docket No. 370A-MR. (Record)

6. On May 6, 2010, the Council voted to reconsider the denial of a Certificate for MMP based on two independent grounds as set forth in General Statutes § 4-181a (a)(1)(B) and (C). (Record)

7. On May 7, 2010, pursuant to General Statutes § 4-181a and § 16-50m, and Section 16-50j-21 of the Regulations of Connecticut State Agencies, the Council gave notice of its public hearing to be held on June 2, 2010, regarding the MMP and MMP-V. (Record)

8. On May 7, 2010, pursuant to General Statutes § 16-50j (h), the following state agencies were requested to submit written comments regarding the MMP: Department of Environmental Protection (DEP); Department of Agriculture (DOA); Department of Public Health (DPH); Council on Environmental Quality (CEQ);

Department of Public Utility Control (DPUC); Office of Policy and Management (OPM); Department of Economic and Community Development (DECD); Department of Transportation (DOT); and Department of Emergency Management and Homeland Security (DEMHS). (Record) The Council received no responses from any state agencies except for the DPH and DEP.

9. On May 20, 2010, the Drinking Water Section of the DPH responded with a letter indicating that the project did not appear to be in a public water supply source water area and therefore it had no comments at this time. (State Agency Comments, DPH Comments dated May 20, 2010).

10. On June 2, 2010, the DEP provided comments, stating that the MMP and MMP-V will have substantially similar environmental impacts, most of the MMP-V additional construction occurs at Meekville Junction and except for one new structure, the MMP-V work at the northern end occurs in upland areas. (State Agency Comments, DEP Comments dated June 2, 2010).

11. On various dates, CL&P provided the following notices to the Town of Manchester: on March 11, 2010, CL&P notified Town officials, including the General Manager, Director of Public Works and Engineering (PWE) and the Director of Neighborhood Services and Economic Development by e-mail of the Council's decision on March 10, 2010; on March 15, 2010, CL&P forwarded a map and an explanation of the MMP-V to them; on April 7, 2010, CL&P delivered two copies of the Petition to the General Manager; on May 3, 2010, CL&P met with such Town officials and briefly discussed the MMP-V; and on June 2, 2010, CL&P e-mailed a copy of the Council's hearing notice to the General Manager and PWE Director. (CL&P 46, p. 4)

12. On May 17, 2010, CL&P notified officials of the Town of South Windsor, including the Mayor and Town Manager, by delivering a letter informing them of the Council's action on the MMP and describing the MMP-V, together with a copy of the Petition and the Council's June 2nd hearing notice. (CL&P 46, pp. 4-5)

13. On May 11, 2010, CL&P sent copies of the Council's notice of its June 2nd hearing, together with an explanatory cover letter, to the majority of those properties appearing on a postal carrier list of 47 abutters and neighbors along the entire ROW between the Manchester Substation and Meekville Junction, and on May 20, 2010, the same materials were sent to the remainder of the list. The letter notified the recipients of the proposed additional construction; advised how to access CL&P's request for reconsideration and supporting testimony on the internet; and advised the recipients of their opportunities to participate in the proceeding as intervenors or commentors. For letters that were returned as undeliverable (non-CL&P owned properties), CL&P checked the records at Town Hall and obtained mailing addresses for the landowners of these properties and, on May 19, 2010, sent them the same materials. For the one remaining property whose landowner is deceased, on May 24, 2010, CL&P notified the fiduciary for the landowner's ancillary estate in Manchester and the estate's attorney. (CL&P 46, pp. 5-6)

14. Four homes abut a portion of CL&P's existing ROW near Meekville Junction, where new structures would be required for the MMP-V but not the MMP. On May 11, 2010, CL&P notified these residents by letter about the MMP-V and provided a copy of the Council's hearing notice. On May 20, 2010, the residents of these homes received a personal visit by a project representative and were informed of the Council's

hearing on June 2nd. On May 21, 2010, CL&P hand-delivered a copy of the May 11th letter to three of these residents, who had only vague recollections of receiving such letter, and left it in each of their doors. The fourth resident recalled receiving such letter. (CL&P 46, p. 6)

15. On May 11, 2010, CL&P provided information about the MMP-V on the Northeast Utilities Transmission Projects' website, including CL&P's full Petition documents and the notice of the Council's June 2nd hearing. (Tr. 1 - MR, Carberry, p. 44)

16. As directed during the pre-conference hearing on May 19, 2010, on May 21, 2010, CL&P erected three signs providing notice of the Council's hearing on June 2, 2010 at the following locations: at Burnham Street Extension just north of Meekville Junction at the entrance to the ROW access road, at Olcott Street on CL&P property at the entrance to the Substation and on property of Atig/Sadiq at the corner of Mary Drive and Botticello Drive. (CL&P 46, p. 6)

17. The Council held a public evidentiary hearing on June 2, 2010 at Central Connecticut State University, Institute of Technology and Business Development, 185 Main Street, New Britain, Connecticut. (Transcript, June 2, 2010 [Tr. 1 - MR])

II. MMP & MMP-V PROJECTS

18. In order to energize the Greater Springfield Reliability Project (GSRP), the MMP or the MMP-V will have to be ready to be energized. (CL&P 44, Carberry [Process], p. 5)

MMP

19. As noted in FOF #23, the MMP would consist of the separation of a 345-kV and a 115-kV circuit for 2.2 miles between Manchester Substation and Meekville Junction, Manchester, Connecticut. (CL&P 1, Vol. 1, p. ES-5)

MMP-V

20. The MMP-V would entail the development of the same new set of steel monopoles and conductors in the middle of the Manchester-Meekville ROW as proposed in the MMP, but would extend the area involved in construction to include a different configuration. Specifically, the proposed MMP-V would:

- a. Extend the new structures and conductors the entire 2.7-mile distance from Manchester Substation to Meekville Junction;
- b. Place a segment of a new 345-kV circuit on the new structures, configured as a 2-terminal line;
- c. Reconfigure the existing 345-kV line (395 Line) currently on the double-circuit lattice towers to a 2-terminal line instead of a 3-terminal line;
- d. Make improvements at the Manchester Substation to establish the reconfiguration; and
- e. Leave the 115-kV circuit (Line 1448) currently existing on the double-circuit lattice towers as is.

(CL&P 26, pp. 2, 3)

21. The increase in the length of the MMP-V over the proposed MMP is 0.5 miles, with approximately 0.1 miles at the south end near the Manchester Substation and approximately 0.4 miles at the north end near Meekville Junction. (CL&P 44, Biondi/Mango, p. 2)

22. The 345-kV (Line 395) that presently occupies the Manchester-Meekville ROW branches in three different directions, like a Y; it runs from Meekville Junction (at structure 20020) to Barbour Hill Substation in South Windsor, from Meekville Junction to North Bloomfield Substation in Bloomfield, and from Meekville Junction to Manchester Substation (the branch involved in the proposed MMP). These three 345-kV branches comprise a 3-terminal circuit. The MMP-V would, in effect, split the existing 3-terminal circuit into two 2-terminal circuits, one extending between North Bloomfield Substation and Manchester Substation, and the other extending between Barbour Hill Substation and Manchester Substation. (CL&P 26, p. 3)

Need

23. To further investigate the MMP-V following the Council's decision on the MMP, CL&P performed: (i) additional power-flow analyses to test and confirm the conclusions based on the preliminary analysis that appears in the record as *CL&P Ex. 26*; (ii) a transfer analysis in order to estimate the probable incremental effect on the Connecticut import capability of constructing the MMP-V rather than the MMP; (iii) system stability analyses; and (iv) short-circuit studies; and further considered the prospects for obtaining regional cost treatment for the MMP-V.

24. The additional power-flow analyses demonstrate that the MMP-V does not resolve any thermal reliability criteria violations for the system conditions modeled that

are not also resolved by the MMP. However, establishing a new 345-kV connection with the MMP-V between the North Bloomfield and Manchester Substations reduces power flow on the 115-kV network between these substations following N-1 and N-1-1 contingency events. (CL&P 44, Scarfone/Laskowski, p. 6)

25. The additional voltage analyses demonstrate that with a transmission topology that includes the MMP-V, but not the two 345-kV capacitor banks presently proposed for the Ludlow Substation (Massachusetts) as part of GSRP, system voltages on the bulk power 345-kV system for N-1-1 contingency events do not fall below acceptable levels as with the MMP. (CL&P 44, Scarfone/Laskowski, p. 6)

26. The transfer analyses results for the MMP-V showed only a small increase in the N-1 Connecticut Import transfer limit capability of approximately 25 MW and as to N-1-1 conditions, for almost all line-out simulations there was a negligible improvement in the Connecticut Import interface transfer limit capability. However, with any portion of the 345-kV Barbour Hill-Manchester-North Bloomfield 395 circuit out initially, there is an increase of more than 150 MW in this limit. CL&P concluded that, overall, these results indicate that the MMP-V does not provide a significant incremental improvement in the Connecticut Import interface capability. (CL&P 44, Scarfone/Laskowski, p. 7)

27. The stability studies indicate that there is no appreciable difference in system dynamic performance between the MMP and the MMP-V. The short-circuit analyses show no criteria violations with either the MMP or the MMP-V. (CL&P 44, Scarfone/Laskowski, p. 9)

28. Based on the additional tests demonstrating that the MMP-V could eliminate voltage violations that would otherwise require installation of the Ludlow

capacitor banks and/or the ability to take the 345-kV 395 circuit out of service for maintenance under a much wider range of system conditions while minimizing the potential for causing congestion and operating complexity, the costs for the MMP-V are now more likely to be eligible for regionalization. (CL&P 44, Scarfone/Laskowski, p. 9; Tr. 1 - MR, Scarfone, pp. 65-68)

29. Based on CL&P's additional analyses and consideration of system maintenance and operational issues, CL&P prefers the MMP-V to address the need demonstrated in this proceeding because of the following benefits the MMP-V offers:

- System improvement: 2-terminal lines are generally preferred to 3-terminal lines because it is more challenging to design system protection that is reliable under fault conditions for 3-terminal lines, where a fault on a 3-terminal line will entail the loss of a circuit connection at 3, rather than 2 terminals;
- Robust substation support: The elimination of a 3-terminal 345-kV line would result in two independent 345-kV circuits, which would be mostly (between the Ludlow and Manchester Substations) on diverse rights-of-way;
- Reduced power flow: Establishing a new 345-kV connection between the North Bloomfield and Manchester Substations would reduce power flow on the 115-kV network between those substations following N-1 and N-1-1 contingency events;
- Greater operating flexibility: As compared to the MMP, the MMP-V is a more robust solution which provides greater operating flexibility especially during maintenance periods and following N-1 and N-1-1 contingency events;
- Long term system reliability with loops: The long-term expansion plans for Connecticut include the construction of 345-kV loops to enhance system reliability, an approach that is consistent with the removal of existing 3-terminal circuits that limit power transfers and hinder more efficient operation of the bulk power network; and

- Potential import capacity increase: The MMP-V might modestly increase the Connecticut import capability by between 20 and 120 MW.

(CL&P 44, Scarfone/Laskowski, p. 2)

30. Unlike the MMP, the MMP-V avoids the loss of two of the three 345-kV circuits that provide major bulk power connections between Connecticut and neighboring electric systems that could leave the Connecticut system vulnerable to other, unforeseen system conditions. (CL&P 44, Scarfone/Laskowski, p. 5)

31. ISO-NE has no preference for the MMP or the MMP-V; however, ISO-NE recognizes that the MMP-V provides benefits in addition to those provided by the MMP such as the likely elimination of the need for the Ludlow Substation capacitors, some nominal improvements in Connecticut import capability, especially under a number of line outage conditions, and improved maintenance conditions. (ISO-NE 7, CSC-2; Tr. 1 - MR, Kowalski, pp. 33-35)

32. Although ISO-NE is performing a full assessment of the need and timing for the Interstate Reliability Project and Central Connecticut Reliability Project (CCRP), in light of differences in load forecast due to the economy, system changes and resource additions in Connecticut, ISO-NE does not expect the need for MMP or MMP-V to be altered by this assessment. (ISO-NE 7, CSC-1; Tr. 1 – MR, Kowalski, pp. 14-15)

Route and Design

33. The MMP-V would require the same new construction along the Manchester – Meekville Junction ROW as proposed for the MMP plus new construction at each end of the proposed MMP route, so as to complete a new, 2.7-mile 345-kV line segment from Manchester Substation to the western end of Meekville Junction. (CL&P 44, Case, p. 2)

34. At the south end of the proposed MMP, the additional construction to complete the MMP-V would consist of four new 345-kV line spans to Manchester Substation, the removal of two existing structures, and construction within the substation to accommodate a new 345-kV circuit position. The new substation facilities would include a new dedicated 345-kV line terminal structure and associated equipment (line and breaker disconnect switches, 345-kV circuit breaker, CCVTs , wave trap and associated wiring and control equipment); and the relocation of the existing 395 line terminal to the newly completed line position, all within the existing fence line. (CL&P 44, Case, p. 2)

35. At the north end of the proposed MMP, the additional construction would include an additional 345-kV line segment for a distance of approximately 0.4 miles ending about 400 feet past Meekville Junction (at structure 20027), together with the removal of two spans (structures 6278 to 6275) of an existing double-circuit 115-kV line to the west within the ROW. (CL&P 44, Case, p. 3)

36. If the MMP-V were built, the physical facilities on this 2.2-mile section of ROW would be identical to the MMP; however, the circuit supported by the new monopole structures would be operated at 345 kV, and the 115-kV circuit segment that

under the MMP was to be removed from the easterly lattice tower line would remain there. (CL&P 44, Case, p. 4)

37. If the MMP-V were built, the new line of monopole structures would be extended along the 0.5-mile section of ROW from the endpoint of XS-21 (existing structures 20003 to 20018) to the west end of Meekville Junction. (CL&P 44, Case, p. 4)

38. Compared to MMP, nine additional structures are required for the MMP-V with six on the northern end of the line at Meekville Junction and three near the Manchester Substation. (Tr. 1 - MR, Case, p. 78)

39. With capacitor banks, precautions must be taken before energizing the capacitors that are not required for line maintenance. Therefore, the MMP-V, by eliminating the need for the Ludlow Substation capacitors, creates a better solution from a maintenance perspective. (Tr. 1 - MR, Case, pp. 62-63)

Route Alternatives

40. An in-ROW underground route alternative to the MMP-V would be impractical due to wetland impacts. (CL&P 46, p. 8)

41. An in-road underground route alternative is possible along a 4.15-mile-long route between the Manchester Substation and a new transition station location to the north of Meekville Junction in South Windsor. (CL&P 46, p. 8)

42. The cost for the in-road underground route alternative is \$124 million. If the total cost of the all-overhead MMP-V of \$23 million were to be fully regionalized, then Connecticut ratepayers would pay 27% of \$23 million or \$6.2 million, plus 100% of the difference between the in-road underground route of \$124 million less the \$23 million

for the MMP-V or \$101 million, for a total of \$107.2 million, 17.3 times more than the \$6.2 million for the all-overhead MMP-V. (CL&P 46, p. 8)

43. The in-road underground route alternative results in an unreasonable economic burden on Connecticut ratepayers based on its cost, especially since a magnetic field increase, if any, would not be detectable in the vicinity of the three statutory facilities or the four additional homes that would be affected by the MMP-V construction. (CL&P 46, p. 9)

Environmental Impacts

44. The environmental impacts of the MMP vs. the MMP-V are summarized below in Table 1. As this table indicates, compared to MMP, the longer MMP-V route would result in additional temporary and permanent impacts to wetlands, floodways, and floodplains, as well as additional upland forest clearing. However, all such effects will be within CL&P's existing ROW.

Table 1
Environmental Comparison: MMP vs. MMP-V

Feature / Resource	MMP	MMP-V
Route Characteristics		
Length (Miles)	2.2	2.7
ROW Common to Both Routes (Miles)	2.1	2.1
New ROW Acquisition (Acres)	0.055	0.055
Biological Resources		
Watercourses		
• Stream Crossings (No.)	6 (5 perennial, 1 intermittent)	7 (5 perennial, 2 intermittent)
• Principal Streams Crossed	Hop Brook Hockanum River	Hop Brook Hockanum River
• Stream Channel Encroachment Line Crossings (No.)	1 (Hockanum River)	1 (Hockanum River)
Wetlands		
• Number within ROW (Total)	10	13
• Vernal Pools (Number)	3	3
• Temporary Impacts (Crane pads, roads)	168,793 sq. ft. (3.9 acres)	210,470 sq. ft. (4.8 acres)
• Permanent Impacts (Fill)	2,221 sq. ft. (0.05 acre)	2,786 sq. ft. (0.06 acre)
Forested Vegetation Clearing		
• Forested Wetland Clearing	43,568 sq. ft. (1 acre)	65,273 sq. ft. (1.5 acres)
• Forested Upland Clearing	74,502 sq. ft. (1.7 acres)	207,889 sq. ft. (4.8 acres)
• Total Forested Clearing	2.7 acres	6.3 acres
Threatened and Endangered Species		
Potential Habitat near ROW (No.)	1	1
Land Use, Recreation, and Transportation		
Principal Land Uses Near ROW	Urban and suburban development intermixed with undeveloped floodplain areas	Urban and suburban development intermixed with undeveloped floodplain areas
Recreational Areas (Nearby or Traversed by ROW)	James N. Leber Field Hiking trails Hockanum River	James N. Leber Field Hiking trails Hockanum River
Road Crossings (No.)	6 (US Route 6, I-84)	6 (US Route 6, I-84)
Cultural Resources		
• Areas of Potential High Archaeological Sensitivity (miles)	0.3	0.3
• NRHP Sites within 0.25 Miles	1 (Charles Bunce House)	1 (Charles Bunce House)

(CL&P 44, Biondi/Mango, pp. 9, 11)

45. Because new structures must be unavoidably placed within the Hop Brook floodway to allow interconnection to Manchester Substation, the MMP-V would affect the brook area's flood storage capacity. Preliminary CL&P analyses indicate that the MMP-V structures could result in an increase of flood water surface elevation ranging from approximately 0.01 to 0.03 feet; however, such impacts are not significant. Further, if MMP-V is selected, CL&P would perform more detailed hydraulic analyses to define specific impacts to the Hop Brook floodway, after which appropriate compensation for such impacts would be coordinated with the U.S. Army Corps of Engineers and the DEP, as part of CL&P's regulatory applications to those agencies. (CL&P 45, CSC-003; Tr. 1 - MR, Mango, pp. 47-50)

46. Overall, compared to the MMP, the development of the longer MMP-V would result in incrementally greater environmental effects but these effects can be mitigated effectively. (Tr. 1 - MR, Mango, pp. 63-64)

EMF

47. As with the MMP, the post-construction edge-of-ROW magnetic fields (MF) will be generally lower than the pre-construction levels. (CL&P 44, Carberry [EMF], p. 3)

48. The MMP-V would achieve less reduction than the MMP along the common 2.2-mile segment of ROW. (CL&P 44, Carberry [EMF], p. 3; Tr. 1 - MR, Carberry, p. 79)

49. Along a section of ROW where no construction would take place with the MMP, the MMP-V would achieve a dramatic reduction of MF on the north side of the ROW. (CL&P 44, Carberry [EMF], p. 3; Tr. 1 - MR, Carberry, p. 79)

50. In the ROW segment from existing structure 20003 to 20018, with the MMP-V, the new 345-kV line will be best phased but cannot be split-phased like with the 395 line in the MMP. (CL&P 44, Carberry [EMF], p. 6)

51. In the ROW segment from existing structure 20020 to 20022, with the MMP-V, there is an opportunity to split phase the 395 line because the existing conductors on the south side of the towers would otherwise not be needed. (CL&P 44, Carberry [EMF], p.6)

52. As noted in FOF #342, two schools and a playground are located in the vicinity to the east of the ROW. With the MMP-V, such facilities are adjacent to an existing 345-kV line and would not be adjacent to the new 345-kV line. Two of these facilities are too far away such that MF would not be detectable from the new 345-kV line, and for the third facility, MF would be no greater than preconstruction fields. (CL&P 44, Carberry [EMF], p. 10; CL&P 46, p. 7)

53. The four additional homes that are part of the MMP-V construction would not be exposed to an increase in the pre-NEEWS AAL MF levels. These homes would not be adjacent to the new 345-kV line. (CL&P 44, Carberry [EMF], p. 11)

54. With the MMP-V and all of NEEWS, the increase in the current on the new Agawam to North Bloomfield line as part of the GSRP would increase the projected MF associated with that line by about 2.3% because the MMP-V makes a longer path for the portion of the power flow to North Bloomfield that goes south to the Manchester Substation on the 395 circuit, then doubles back to Meekville Junction and on to the North Bloomfield Substation on the new 345-kV line. That increase is not significant because of the conservative assumptions in the model including a very low conductor

height and a very high import level. (CL&P 44, Carberry [EMF], p. 12; Tr. 1 - MR, Carberry, pp. 80-81)

Cost

55. The additional cost of the MMP-V is \$9,250,000. (CL&P 44, Case, p. 5; Tr. - MR, Case, p. 77)

56. If the MMP-V were built rather than the MMP, the additional voltage support that the MMP-V would provide would likely make it unnecessary to install the 345-kV capacitor banks at the Ludlow Substation. Therefore, the cost of building the MMP-V could likely be offset by a saving of the cost of the Ludlow capacitor banks estimated to be \$10,000,000. (CL&P 44, Scarfone/Laskowski, p. 6; CL&P 44, Case, p. 5; Tr. 1 - MR, Case, pp. 61-62)

57. According to CL&P, the opportunity that the MMP-V provides for scheduling and performing maintenance, which has been recognized in the past by ISO-NE, could help qualify the additional cost associated with the MMP-V for regional cost treatment. Maintenance cost savings may be achieved with MMP-V based on the ability to take transmission lines out of service and still operate the system without more expensive generation. (CL&P 44, Scarfone/Laskowski, p. 10; Tr. 1 - MR, Kowalski, p. 23 and Scarfone, p. 66)

58. The avoidance of the Ludlow Substation capacitor banks for providing voltage support could also help qualify the MMP-V for regional cost treatment. (CL&P 44, Scarfone/Laskowski, p. 10; Tr. 1 - MR, Scarfone, pp. 67-68)

Schedule

59. Selection of the MMP-V by the Council is not likely to cause delay in the overall construction schedule for GSRP because (i) CL&P must amend its pending federal and state environmental permit applications (filed in 2009) to reflect the Council's decision regarding GSRP and the agencies then must evaluate such amendments; and (ii) the Massachusetts Energy Facilities Siting Board has not yet issued its decision regarding the Massachusetts portion of GSRP, which also may require further amendments to the regulatory filings. (CL&P 44, Carberry [Process], pp. 3-5; Tr. 1 - MR, Carberry, pp. 45-46)

Appendix A

Excerpts from CSC FOF Dated March 10, 2010

351. The MMP-V does not meet any reliability need beyond the need met by MMP. However, in power flow studies conducted by CL&P, the circuits were less heavily loaded under contingencies with the MMP-V than with the MMP, which indicates that MMP-V is a more robust and longer-lasting solution. (CL&P 26, p. 6)

352. The MMP-V might allow an increase in the Connecticut/Massachusetts transfer limit of up to 100 MW. ISO-NE has not studied this matter. (ISO-NE 6, R. CSC-1(a))

353. Two of the other NEEWS projects (CCRP and IRP), while meeting reliability needs of their own, would also provide reliability benefits similar to those offered by MMP-V, but greater. (ISO-NE 6, R. CSC-1; Tr. 5, pp. 175, 176)

354. CCRP addresses a particular reliability problem on the #395 circuit that has been identified under planning criteria. If this project does not go forward, CL&P would be required to formulate another plan, which would probably be the same on the MMP-V. (Tr. 5, pp. 175, 176)

Route and Design

355. The increase in the length of the MMP-V over the proposed MMP is 0.4 miles. (CL&P 26, p. 3)

356. The existing 345-kV circuit established in the Manchester-Meekville ROW (#395), branches in three different directions, like a Y; it runs from Meekville Junction to Barbour Hill Substation in South Windsor, from Meekville Junction to North Bloomfield Substation in Bloomfield, and from Meekville Junction to Manchester

Substation (the branch involved in the proposed MMP). These three 345-kV branches comprise a 3-terminal circuit. The MMP-V would, in effect, split the existing 3-terminal circuit into two 2-terminal circuits, one extending between North Bloomfield Substation and Manchester Substation, and the other extending between Barbour Hill Substation and Manchester Substation. (CL&P 26, p. 3)

357. MMP-V includes the installation of a new 345-kV circuit-breaker and associated equipment at the Manchester Substation, which is not necessary as part of the proposed MMP. (CL&P 26, p. 3)

358. The reliability improvements to be achieved by the MMP-V design would allow the double-circuit line to remain. No circuit separation would be necessary. (ISO-NE 6, R. CSC-2; CL&P 43, R. 2)

359. MMP-V would follow the current trend of designing transmission "loops" throughout the ISO-NE system, and eliminating 3-terminal circuits, which are particularly vulnerable to planning criteria contingencies. (CL&P 26, p. 8; CL&P 43, R. 1)

360. The second 345-kV circuit created by MMP-V would provide greater operating flexibility for the electric system, especially during maintenance periods. (CL&P 26, p. 9)

361. Constructing the extended line of new structures for MMP-V would require the crossing of several 115-kV lines, some of which are double-circuit. Many more existing 115-kV structures would have to be relocated for this crossing than are proposed to be relocated by MMP. This more extensive relocation would require line outages. (CL&P 26, p. 4)

Environmental Impacts

362. There are numerous wetland areas along the subject ROW. (See the heading on wetlands under the Findings of Fact on MMP above). The increased construction required by MMP-V would increase wetland impact. CL&P has not determined the extent of additional wetland impact. (CL&P 26, p. 4)

EMF

363. No calculation of EMFs has been made for MMP-V. (Record)

Cost

364. The additional MMP-V cost is approximately \$10 million, bringing the total cost of construction of the MMP to approximately \$24 million. The additional cost may not qualify for regionalization. (CL&P 26, p. 5)

Schedule

365. The MMP-V could cause some delay in the schedule compared to the MMP because additional environmental impacts may impact some permit applications that have already been filed. (CL&P 26, p. 2)